

1.-hand observations with the IIRMS Sky Survey Prototype System  
B. "P. Olsen, S. M. Levin, H. L. Jones and S. Gulkis  
Jet Propulsion Laboratory  
California Institute of Technology  
4800 Oak Grove Drive  
Pasadena, CA 91109-8099

in support of the development of NASA's High Resolution Microwave Survey (HIRM) Sky Survey Operational System (SSOS), we have conducted exploratory observations at 1.4 GHz, 1.7 GHz and 2.3 GHz at DSS13 (Venus Station) in Goldstone, CA. We used the Sky Survey Prototype System, which is a 2<sup>21</sup> channel FFT system spanning an instantaneous intermediate frequency bandpass of 40 MHz at a spectral resolution of 19 Hz, and a temporary receiver and linearly polarized feed on the 26m antenna to repeatedly map a region of the sky spanning 90° in galactic longitude and 5° in galactic latitude. The goal was twofold: (1) to assess the impact of the active radio frequency interference (RFI) which infests this microwave band upon current and planned hardware and software subsystems, and (2) to prototype the analysis of radio astronomy data from the sky survey.

The observational data were recorded and are being used to test and refine our current strategies for RFI rejection in real time and during post processing. The objective of this task is to identify those methods which are most efficient and least costly to implement in the future SSOS while at the same time minimizing the fraction of the RF bandpass lost to the search for signals of extraterrestrial intelligent origin.

The noise power estimates which spanned the instantaneous band pass at 312.5 kHz resolution were also recorded to provide a low resolution radio astronomy spectral mapping capability. The resultant maps of the continuum emission of the galaxy have proven to be useful diagnostic tool as well as an indication of the future scientific product from the sky survey.